

"METHOD AND CIRCULAR KNITTING MACHINE FOR MANUFACTURING  
TUBULAR KNITTED ARTICLES WITH ONE CLOSED END"

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CLAIMS

1. A method of knitting tubular fabric articles with one closed end, such as socks with closed toe, on a circular knitting machine equipped with pick-up means in the form of needles or hooks associated with a device for turning the item over so that the bottom is uppermost, and where the pick-up means are positioned on a number of linked supporting sectors, which are able to move from an annular position corresponding to a needle cylinder of the machine and a linear position on two parallel facing rows and movable above and at a distance from the needles cylinder to a sewing area, comprising the steps of:
  - opening, on termination of the knitting of the item, a cover of the machine and moving the supporting sectors of the pick-up means into a circular configuration above the cylinder with needles,
  - transferring the knitted item to the height of at least the last row of knitting from the needles of the cylinder to said pick-up means on said supporting sectors in a circular configuration,
  - 20 moving the knitted item away from the cylinder towards the sewing area, while it is held by said pick-up means on the supporting sectors in a circular configuration,
  - resetting and restarting the machine to start a new item,

turning the knitted item over so that the bottom is uppermost through said pick-up means in a circular configuration,

moving the supporting sectors to meet each other in a linear position along two lines so as to place the two opposite ends of knitted fabric to form a

5 straight line and in contact with each other on said pick-up means, and

joining the two ends of the knitted fabric now in contact, either by sewing or linking.

2. A method according to claim 1, in which the turning upside down of the item is carried out off the machine, coinciding with the movement of the pick-up  
10 means away from the cylinder of the machine.

3. A method according to claim 1, in which the turning upside down of the item is carried out off the machine when the pick-up means are in the sewing or linking area.

4. A method according to claim 1, in which the support sectors with  
15 pick-up means take on the linear configuration of two parallel rows after the item has been turned upside down during or on termination of the movement of the pick-up means towards the sewing or linking area.

5. Circular knitting machine comprising a cylinder with needles for the manufacture of a tubular fabric item such as a sock, means to pick-up the article  
20 from the needles of the cylinder, in the shape of needles or hooks positioned on several linked support sectors movable from an annular position corresponding to the cylinder with needles of the machine and a linear position in to facing parallel rows, said support sectors being also movable from a position above the cylinder with needles and a position distant from the latter in a sewing or

linking area to close the end of the tubular fabric, characterised by means to control and move the pick-up means from the position over the cylinder to the sewing or linking area, means for configuring the pick-up means in an annular shape when they are positioned above the cylinder and in a linear shape in two

5 lines when they are distant from the cylinder, a device for turning the item upside down, associated with pick-up devices and managed so as to turn the item upside down when the pick-up means are distant from the cylinder and position said pick-up means in a linear formation in two lines after the item has been turned upside down.

10 6. Circular sock knitting machine according to claim 5, in which the turning upside down device is directly associated and moves together with the pick-up means.

7. Circular sock knitting machine according to claim 5, in which the turning upside down device is stationary at or nearby the sewing or linking area.

15 8. Circular sock knitting machine according to claims 5, in which the pick-up means are movable from the position above the cylinder to the sewing or linking area position by turning on an axis or translating, the sewing or linking area being dedicated to a single machine or common to several machines.